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State of California—Health and Human Services Agency
California Department of Public Health

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May 13, 2011

Dale Harvey, Senior Water Resource Control Engineer
Regional Water Quality Control Board
1685 E Street
Fresno, CA 93706

Subject: Review of Draft Waste Discharge Requirements (WDR) for Tejon Industrial Complex (TIC) New East Water Reclamation Facility in Kern County (System No. 1590007)

Dear Mr. Harvey:

On behalf of the California Department of Public Health (CDPH), we have reviewed the tentative waste discharge requirements for Tejon-Castac Water District, Tejon Industrial Complex New East Wastewater Treatment Facility in Kern County and have the following comments:

1) Please correct Provision "*16. The turbidity of disinfected tertiary recycled water that is passed through a microfiltration, ultrafiltration, nanofiltration, or reverse osmosis membrane shall not exceed the following (Title 22, Section 60301.320):*
   a. 0.02 NTU more than five percent of the time within a 24 hour period, and;
   b. 0.5 NTU at any time."
   Replace 0.02 NTU with 0.2 NTU.

2) The WDR states, under "*C. Ultraviolet Disinfection (UV) System Specifications*
   1. The Discharger shall provide continuous, reliable monitoring of flow, UV transmittance, UV intensity, UV dose, UV power, and turbidity.
   2. The Discharger shall operate the UV disinfection system to provide a minimum UV dose of 80 millijoules per square centimeter (mJ/cm2) at all times, unless otherwise approved by CDPH.
   3. The UV transmittance (at 254 nanometers) in the wastewater shall not fall below 65 percent of the maximum at any time, unless otherwise approved by CDPH.
   4. The quartz sleeves and cleaning system components shall be visually inspected per the manufacturer's operation manual for physical wear (scoring, solarization, seal leaks, etc.) and to check the efficacy of the cleaning system.
   5. The quartz sleeves shall be cleaned at fixed intervals to ensure the minimum required UV dose delivery is consistently achieved. Cleaning intervals shall not be established based on the presence of coliform organisms.

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6. Lamps shall be replaced per the manufacturer's recommendation, or sooner, if there are indications the lamps are failing to provide adequate disinfection. Lamp age and lamp replacement records must be maintained.
7. The Discharger shall comply with all of CDPH's acceptance conditions for the UV disinfection system in use at the WWTF.
8. Prior to initial discharge to the ponds, the Discharger shall submit to the Executive Officer a copy of the letter from CDPH stating that all the UV disinfection system pre-operation acceptance conditions specified by CDPH have been satisfied.
9. The UV disinfection system shall be operated in accordance with an approved operations and maintenance plan.

3) Replace C. 2. with "Until otherwise approved by CDPH, the Discharger shall operate the UV disinfection system to provide a minimum UV dose of 100 millijoules per square centimeter (mJ/cm^2) at all times. UV dose equations approved by CDPH must be used as part of the automatic UV disinfection control system for calculating UV dose."

4) Replace C. 9. with "The facility should be operated in accordance with an approved operations plan, which specifies clearly the operational limits and responses required for critical alarms. The operations plan should be submitted and approved by CDPH. A copy of the approved operations plan should be maintained at the treatment plant and be readily available to operations personnel and regulatory agencies. The following should be described:
    a. Control system
    b. Alarm functions
    c. Alarm setpoints
    d. Records
    e. Reports
    f. Procedures and frequency of lamp replacement
    g. Procedures and frequency of calibration of all monitoring equipment
    h. Location, access, and quantity of backup supply of lamps and other critical components
    i. frequency of the membrane integrity test"

5) Add C. 10. "A quick reference plant operations data sheet should be posted at the treatment plant and include the following information:
    a. The alarm set points for tertiary turbidity, high and low flow, UV dose and transmittance.
    b. The values of high turbidity, high flow, and low UV dose, when flow must be diverted to waste.
    c. The required frequency of calibration for all monitoring equipment measuring turbidity, flow, UV intensity, and UVT.
    d. The required frequency of mechanical cleaning/wiping and equipment inspection.
    e. The UV lamp age tracking procedures and replacement intervals."

6) Add C. 11. "The UV system must be operated with a built-in automatic reliability feature that must be triggered when the system is below the target UV dose. Conditions that should shut plant down and divert flow include: inability to meet the minimum UV dose, high flow, low UV sensor level, low UVT, or reactor failure."

7) Add C. 12. "There shall be no bypassing of untreated or partially treated wastewater from the plant or any intermediate unit processes to the point of use."

8) Add C. 13. "Any discharge of untreated or partially treated wastewater to the use area, and the cessation of same, shall be reported immediately by telephone to the RWQCB, CDPH, and the local health officer."

9) Add C. 14. "The plant shall be provided with a sufficient number of qualified personnel to operate the filtration and disinfection facility effectively so as to achieve the required level of treatment at all times."

10) Add C. 15. "A preventive maintenance program shall be provided to ensure that all equipment is kept in a reliable operating condition."

11) Add C. 16. "UV intensity sensors, flow meters and UVT monitors must be properly calibrated to ensure proper disinfection."

12) Add C. 17. "The plant shall have a minimum of one reference UV intensity sensor on site at all times. Measurements made by each duty UV intensity sensor shall be checked at least monthly using a reference UV intensity sensor. For all UV intensity sensors in use, the ratio of the duty UV sensor intensity to the reference UV sensor intensity must be less than or equal to 1.2. If the calibration ratio is >1.2, the failed duty UV sensor must be replaced by a properly calibrated sensor and recalibrated by a qualified facility. The reference UV intensity sensors shall be recalibrated at least annually by a qualified facility using a National Institute of Standards and Technology (NIST) traceable standard."

13) Add C. 18. "UVT meter must be inspected and checked against a reference bench-top unit weekly to document accuracy. If the on-line analyzer UVT reading varies from the bench-top spectrophotometer UVT reading by 2% or more, the on-line UVT analyzer must be recalibrated by a procedure recommended by the manufacturer."

14) Add C. 19. "Flow meters measuring the flow through a UV reactor must be verified to determine accuracy at least monthly via checking the flow reading against other flow determination methods."

15) Add C. 20. "Equivalent or substitutions of equipment are not acceptable without an adequate demonstration of equivalent disinfection performance."

If you have any questions about this letter, please contact me at (661) 335-7315.

Sincerely,

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CC: Kern County Environmental Health Services Department

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